

NASHVILLE FAIRGROUNDS SPEEDWAY

Upgrade Assessment



Driven.

Prepared by Driven International

9 February 2023

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PURPOSE OF THIS ASSESSMENT







Purpose of this assessment

Driven International have been engaged by the Metro Nashville Planning Department to undertake and put together an assessment of the Fairgrounds Speedway Nashville. The purpose of this assessment is to create a list of potential upgrades to the facility which would ensure that it can continue to operate for at least the next 30 years.

ABOUT DRIVEN INTERNATIONAL

Driven International Ltd are a group of Architects, Engineers and Race Track Designers predominantly based in the UK*. We have experience of designing motorsport venues around the world and many projects in the USA, with a varying portfolio of new tracks and refurbishments to existing facilities. In January 2023 three representatives from Driven visited the Fairgrounds Speedway Nashville to assess the venue in person, take photographs, and speak with the venue operators about the main constraints and opportunities of the facility.

ABOUT THIS ASSESSMENT

This assessment makes recommendations, some of which have a higher priority than others – some are crucial to the operation of the venue and the racing, and some are opportunities for increased revenue and could be considered as optional. We have introduced a scoring system to help prioritise these recommendations.

Our assessment covers the track surface, outside wall of track, inside wall of track, pit road, wheel/catch fence, spectator grandstand, grandstand roof, amenities such as bathrooms, concessions, track lighting, sound mitigation, and other general observations. The review focuses on areas for improvement and specific areas identified to the team during the site visit and is not intended to be a review of every aspect of the speedway.

We hope that this assessment acts as the starting point for extending the life of this historic and important venue.

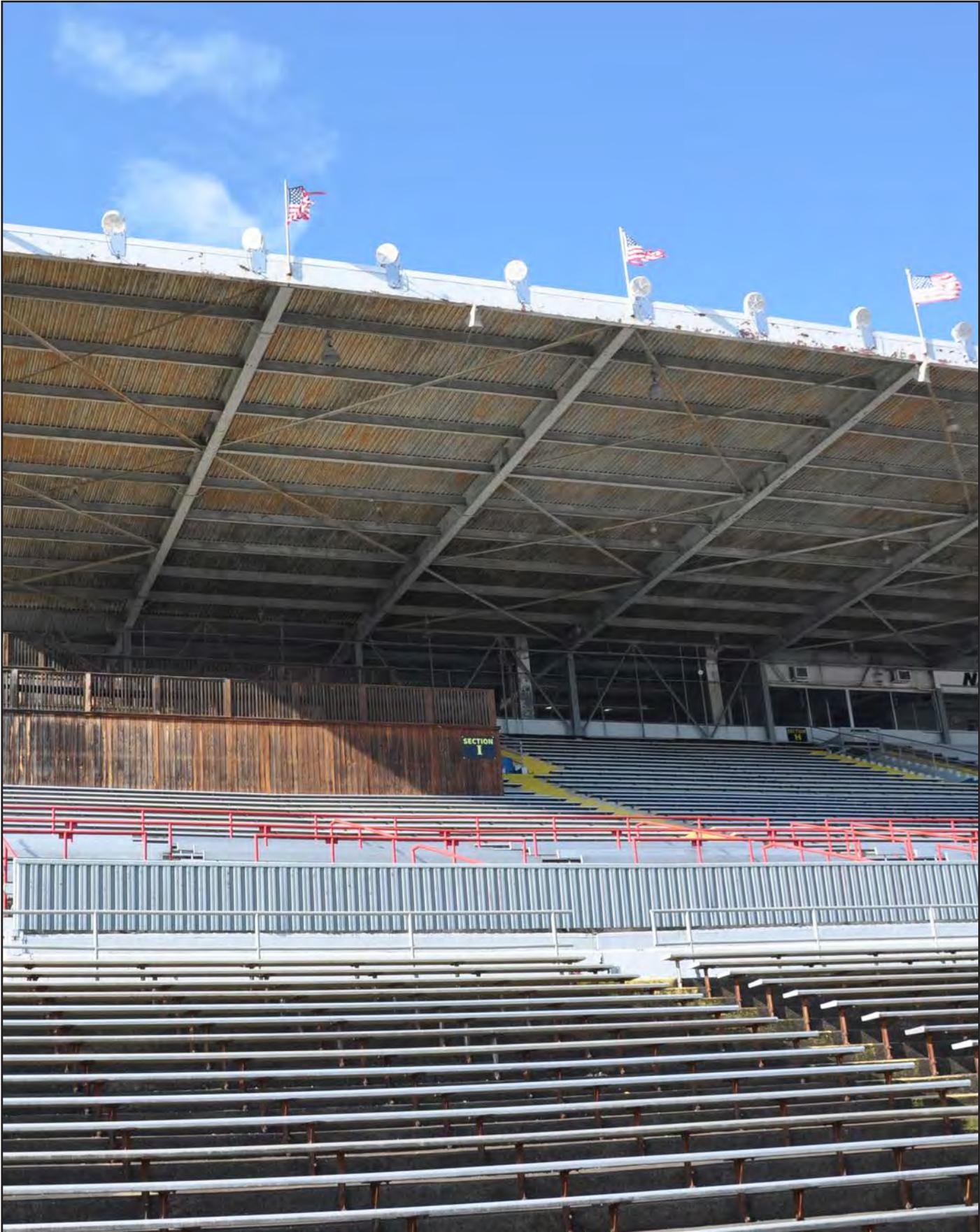
REPORT STRUCTURE

This report is structured into a review of the existing condition and is followed by a section on potential upgrades to the facility to safeguard its ability to run for the foreseeable future. Many areas of the facility are covered but not necessarily every aspect, for example financial structure.

The assessment generally considers a longer period than immediate upgrades, therefore observations and recommendations may not all be immediately needed but are recommended to improve the future of the speedway.

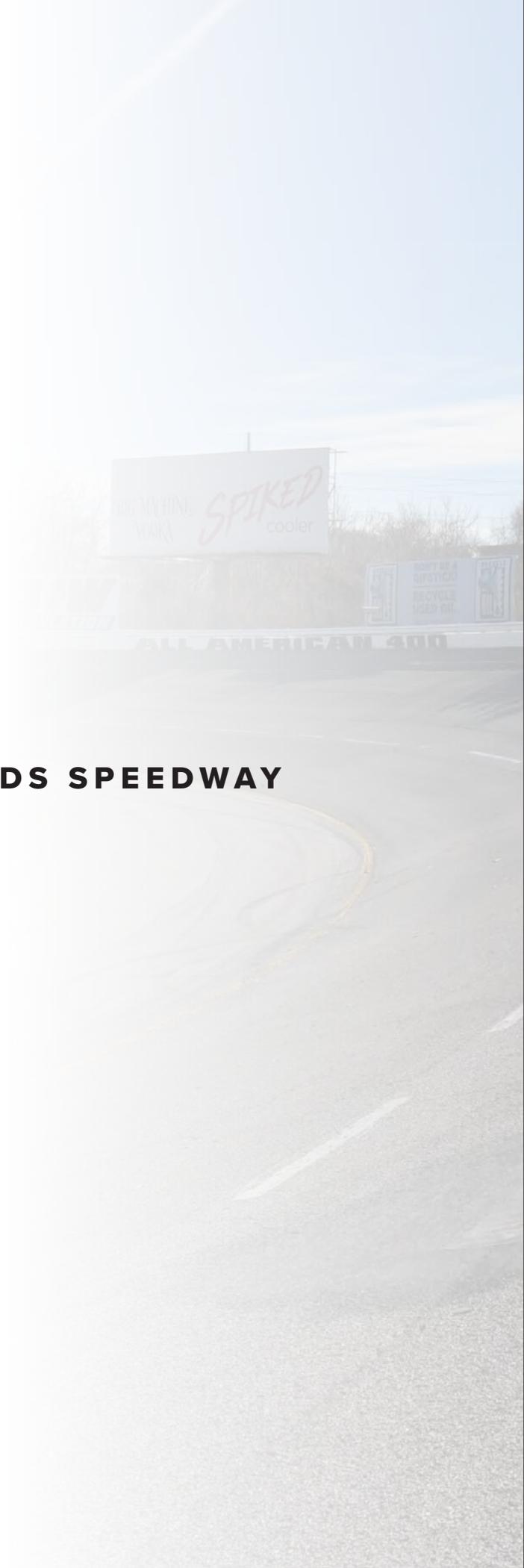
*Driven are licenced architects and engineers in the UK.

UPGRADE ASSESSMENT





ABOUT FAIRGROUNDS SPEEDWAY



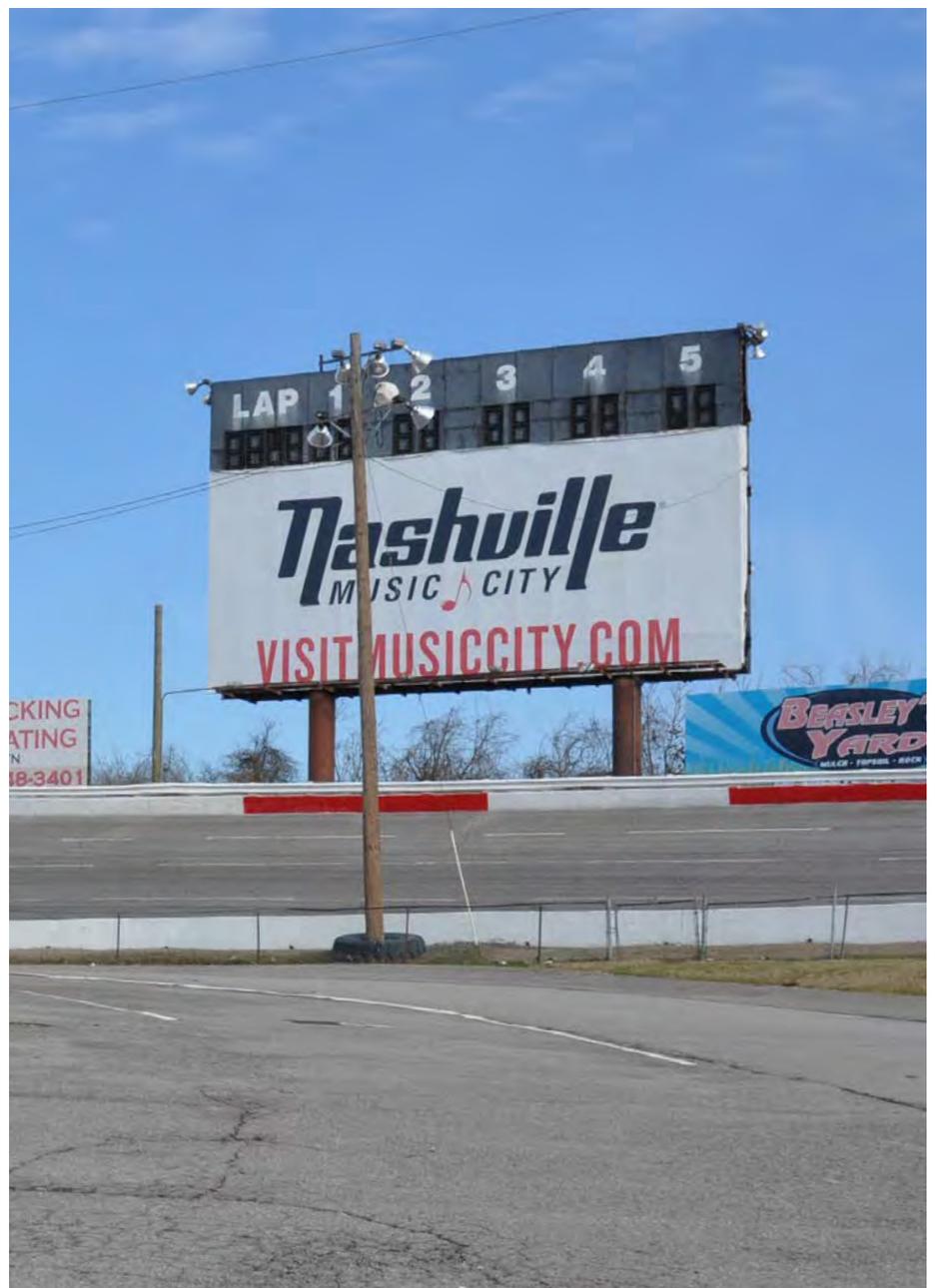
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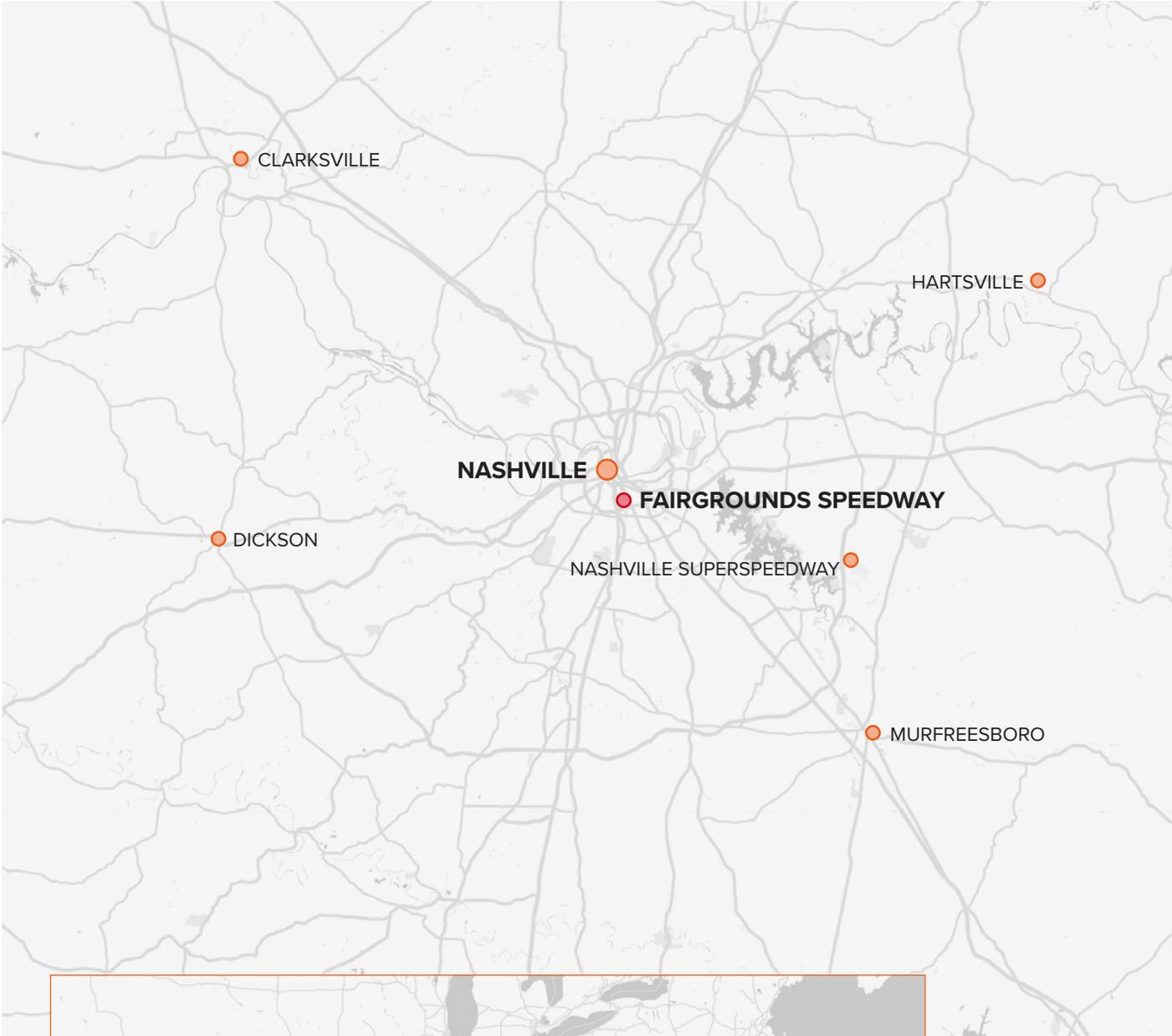
1.1 Location and History

Fairgrounds Speedway Nashville is a historic racetrack located in Nashville, Tennessee, USA. It is situated on the grounds of the Tennessee State Fairgrounds, South of Nashville city centre and close to the I65.

The track has hosted various forms of motorsports, including NASCAR and IndyCar, and has a seating capacity of approximately 15,000. It is considered to be one of the oldest continuously operating racetracks in the United States.



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1.2 The Venue

Fairgrounds Speedway Nashville hosts several weekends of racing across the racing calendar, with the U.S Legends Spring Nationals and All American 400 being two of the largest. In between these large events, the track hosts smaller open practice days.

SPECTATOR EXPERIENCE

The spectator grandstands at Fairgrounds Speedway Nashville appear to offer a great viewing experience. Concession stands are available, offering a variety of food and drink options. There are a few options for hospitality areas, and restrooms are also available on site. However the concessions and restrooms have not been updated in many years, and ADA compliance generally across the venue is considered to be lacklustre.

RECENT DEVELOPMENTS

The venue operates within a smaller curtilage of land today than it has historically. Recently with the construction of the GEODIS Park stadium and the residential apartment buildings, the available parking and event area outside of the oval has been reduced significantly. From our research, it also appears there are plans to construct more apartments in areas that are currently used as spectator parking lots, reducing it further still.

Overall, the Fairgrounds is a much loved and historic speedway in a great central location, but is in need of repair and modernisation in several key areas if it is to function well across the next 30 years.

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OBSERVATIONS





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Nashville
MUSIC CITY
WWW.MUSICCITY.COM

JEGS
JEGS

RACKLEY
RACKLEY

ALL AMERICAN 400

NASHVILLE

CONCRETE
CONCRETE

THE GREAT
THE GREAT

THE GREAT
THE GREAT



2.1 Spectator, Competitors and Officials Access

SPECTATORS

There are two main entrances to the venue for spectators, either side of the grandstand on the Western edge. There is parking to the North of Benton avenue, as well as the in Nashville Flea Market parking lot. There is also some parking made available to the South in an area of grassland.

From our visit, it seems that anecdotally there is not enough parking available for larger events. Looking at the wider site, there used to be much more parking available before the creation of the new stadium and residential apartments. Certainly comparing this speedway to other similar facilities, parking provision for spectators is lacking. There also appear to be plans to construct more apartments on the land North of Benton Avenue, which will reduce this provision further.

COMPETITORS

The main paddock area, accessed off of Craighead Street is of high importance to the functioning of a race weekend. The tunnel under the track to the infield area is difficult to navigate in a large truck, as the road meanders across a bridge over Browns Creek. This means that any large trucks park in this main paddock, then unload track vehicles to cross under the tunnel to the infield.

The main paddock area is therefore the only place where large trucks can park up during an event. There is an alternative access for competitors to the infield – trucks can drive up from the South and in through the South West gate, cross over the speedway and into the infield. This is not ideal as it means trucks have to pass close to spectators, and no track activity can take place while trucks are crossing. There is also observable damage to the speedway asphalt along this route caused by trucks scraping along due to the levels changes involved.

OFFICIALS

Officials are generally spread between two main locations during an event – either at the race control area at the top of the grandstand, or in the infield. Access to the infield for officials is the same as for competitors as outlined above. Access to the race control areas is via an elevator or stair in the main concessions area under the grandstands. Generally the access for officials around the venue seems to work well.

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Access into the venue shown in blue, dashed arrow denotes tunnel crossing under speedway



2.2 Track Surface Condition

TRACK SURFACE

The existing racing surface is an asphalt track, which appears to be approaching the end of its life.

Asphalt has a finite life span and when subjected to the intensity of use as a racing surface can require frequent resurfacing. The surface at Nashville is reaching the end of its life and resurfacing needs to be planned in the near future based on the observations made on site.

The following features of the asphalt were observed:

- Spalling at joints between paver runs leading to longitudinal cracks forming.
- General damage to the asphalt surface caused by vehicles losing control
- Patch repairs to the asphalt surface
- Aggregate loss from the asphalt matrix
- Bumps / undulations in the asphalt due to its ages

Cracking and deterioration of the asphalt surface increase water ingress into the surface as subsequently create the conditions for pavement deterioration to speed up. Hence maintenance of asphalt is a key factor in its lifespan. On site there was no obvious evidence of crack repairs or other maintenance recently.

PIT ROAD SURFACE

The asphalt in pit road is in a similar condition, albeit with slightly less aggregate loss. The working area of pit road is asphalt rather than concrete which is generally a popular choice due to the better hydrocarbon resistance of concrete (spillages).

No survey or laser scan data of the surface was available for this report, but a brief review of onboard footage shows that the track surface is somewhat uneven. This is not unexpected for a facility of this age and racing class, but there is good scope for improvement.

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Cracking at joints which has subsequently spalled at the edges leading to a 4 inch gap in the asphalt.

2.3 Track Safety Condition

This section considers the current track safety provision, including the barriers and catch fence and other ancillary features of the track.

OUTER FIRST LINE OF PROTECTION – CONCRETE & STEEL ARMCO WALL

The main circuit is currently surrounded on its outside by a continuous concrete wall, interrupted only by access gates to the circuit. In many countries this is referred to as the first line of protection due to its nature as the first impact point for an errant vehicle

Generally the concrete wall is in a tolerable condition but is beginning to show signs of damage in areas that have been subjected to repeated impacts. It is outside of the scope of this assessment to provide structural analysis on the wall but obvious visual signs of cracking/failure were not seen (note the thick layer of paint).



Typical outside barrier arrangement.

Notably, the concrete section of the wall is not deemed high enough when compared to other international and national motorsports venues and thus has been previously extended through the addition of a single row of Armco rigidly bolted to the top of concrete around the curves. This Armco has not been added on the straights or on the inner walls leaving the concrete at its original dimensions.

The outside wall is generally 22 inches high and 12 inches wide when not topped with Armco and there is no SAFER barrier used.

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INNER FIRST LINE OF PROTECTION – CONCRETE WALL OR TWIN ARMCO

The inner first line of protection consists of either a low concrete wall or twin Armco as a means to separate the track from the infield. This inner line is punctuated by gaps to access the inner paddock as well as the mini track on the infield.

PIT ROAD PROTECTION – CONCRETE WALLS

Pit road is separated from the track by a low concrete wall with similar dimensions to the outer concrete wall. The ends of the wall are protected by a single large tyre.

On drivers left of pit road is another low concrete wall, similar to most oval racing tracks, with the addition of occasional gaps to facilitate use of the smaller infield oval.

The available length of wall may be short if the desire to run larger events develops in the future. There is currently grass area available if this was to be extended in future.



Pit road protection



2.3 Track Safety Condition (Continued)

SECOND LINE OF PROTECTION – CATCH FENCING

Mounted to the outer concrete wall is the circuit catch fence, also referred to as debris fence or second line of protection. This is located only on the front straight in front of the grandstand and around the curves of the mini interior track.

Catch fencing is a fence designed to arrest airborne components in the event of a collision (including entire vehicles) and contain the incident to within the racing area. This is achieved through the use of high strength, tensioned steel components. Specialist manufacturers provide these products for racing venues.

The catch fence at Nashville Fairgrounds Speedway is a tensioned product made of a wire mesh and tensioned steel cables run between posts. The fence is vertical with a short section at the top cranked 45 degrees towards the track. This is a different configuration to many NASCAR ovals which are now using taller catch fencing with the top rounded towards the track to provide more containment.

The fence is tensioned using a metal U shaped anchor bolted through the wall. The anchor interrupts the flush concrete face of the wall and is not advised due to the protrusion into the racing area which could risk catching on a vehicle.



Tensioning points for catch fence and flag box

Catch fencing is not provided in other areas:

- Over tunnels
- Around the curves
- Where the track is adjacent to public highway.

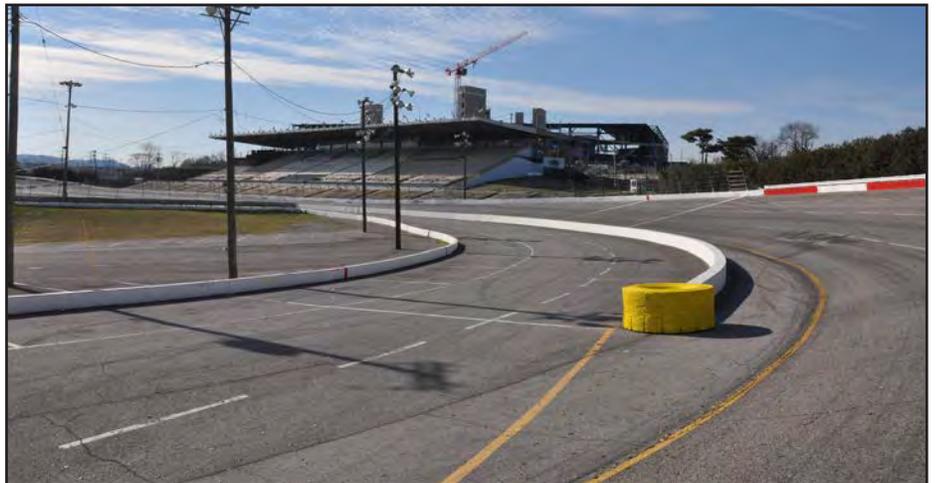
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ENDS OF WALL PROTECTION

The entry to pit road has the end of the concrete wall protected by a large tyre as a vehicle attenuator. This set up is repeated on other exposed barrier ends. There is a risk that the tyre could move during an impact, or fail to provide sufficient damping during an impact.



Heavy machinery tyre as attenuator



Heavy machinery tyre as attenuator

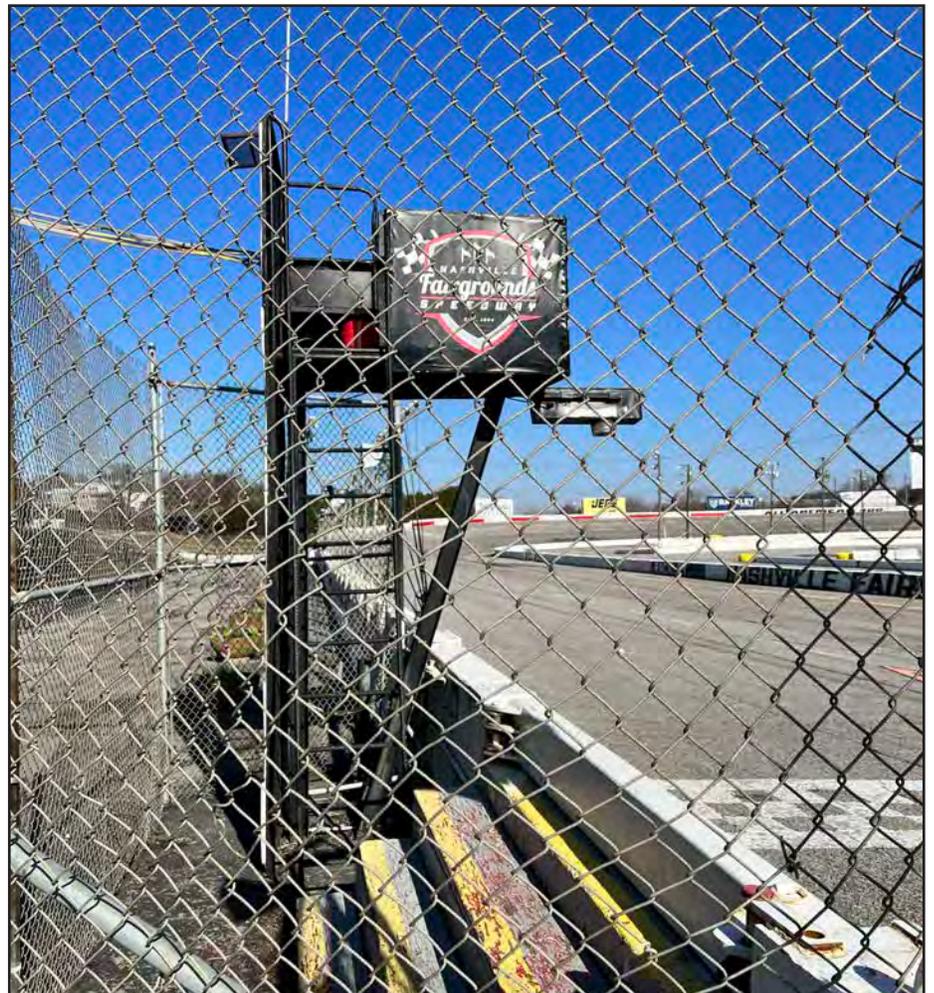
2.4 Track Operation Condition

PIT ROAD CONFIGURATION AND OPERATION

The existing pit road entry comprises of an asphalt access lane which widens from track left, allowing drivers to merge out of the main track before decelerating into pit road.

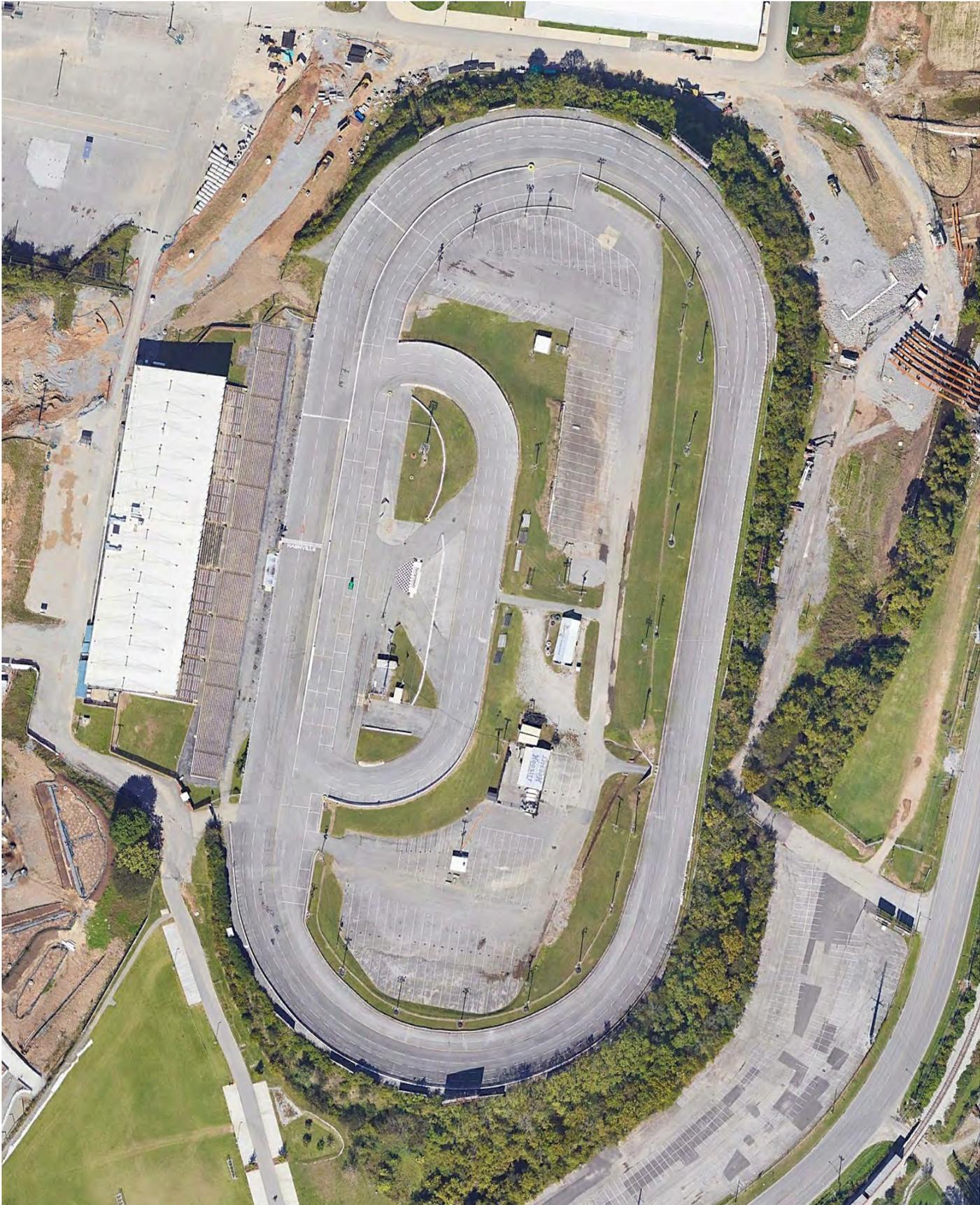
The nature of ovals requires that as the pit road reaches full width a barrier is established between the circuit and pit road. The existing setup consists of only the single tyre attenuator mentioned previously.

After passing the speed limit line for pit road participants are afforded the opportunity to gain speed as they re-join the main racing surface. Given the short length of the track, the opportunity to gain speed is limited but feeds competitor into the track around the inside of turn 1 and 2.



The existing flag box is a simple platform overhanging the track

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2.5 Track and Site Drainage

ON TRACK DRAINAGE

The drainage for the racing area was observed as generally overland flow towards the infield with limited drainage collection structures. No drainage was present on the track side of the wall. Instead there are a number of holes in the base of the wall to allow water to pass the wall and reach the infield. In some areas the holes are missing and there is evidence of standing water after rainfall. This is promoting grass growth in some areas along pit road and may prolong drying time after rainfall.

At pit road the drainage was observed to be obstructed by the wall which may cause a build up of water against the wall and / or slower drainage of the pit road working area. Grass & moss can be seen growing in front of the wall on the asphalt surface indicating the water ponding here after rainfall.

WIDER SITE DRAINAGE

No below ground drainage mapping was provided prior to the visit but it appears that the drainage from the site flows into the river to the east via a single outfall adjacent to the tunnel. Around the site there are minimal signs of below ground drainage pipework with some appearing to be quite rudimentary. The site suffers from water backing up through its main outfall to the river when the river experiences high water levels. Bank exceedance events in the river flood into the track infield via the tunnel which is lower than the top of bank level. In the past this has caused some damage to infield structures.

Outside of the site the improvements to the fairgrounds property associated with the new construction appear to be more modern, including sustainable drainage solutions such as attenuation basins and swales. These features are not present within the Speedway itself.

Drainage gratings within racetrack are a critical component and often require updating. As there are no gratings identified there is no need to upgrade drainage within the racing area but any new drainage should be carefully designed. Generally drainage within a racing area should be capable of mechanical fixing by structurally rated bolts or a monolithic type form.

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Moss and grass can be seen growing in front of the wall, indicating water ponding here after rainfall



2.6 Site Utilities and Electronics

SCOREBOARD

The existing scoreboard, while functional, is quite dated and not particularly effective. It features small and poorly lit track information, and a large billboard area.

SITE UTILITIES

On our visit we were told that the water pipe that serves all the facilities in the infield was smaller than planned, which significantly limits what facilities can be provided in the infield.

There are no LED warning panels / marshal posts installed and marshalling is carried out in the traditional form.

Generally site utilities are not covered in this report, as these services were not visible on our visit.

UPGRADE ASSESSMENT



The scoreboard is looking dated and is not as effective as it could be



2.7 Environmental / Social Condition

NOISE

Around the circuit there are some features which may contribute to the reduction of noise to neighbours of the venue but generally noise from the venue is unimpeded by noise mitigation features. This is not uncommon for older venues, particularly where development has increased during its existence. Generally the only feature which may assist in noise mitigation to the wider community is the adjacent grandstand and stadium which may have a beneficial affect on noise to the West.

A number of mixed use buildings are being built on the fairgrounds site which Driven understand have mitigation features built in, such as upgraded windows. We do not believe that the venue has noise monitoring equipment within the local community but understand that vehicles and events are limited to lower the effect of noise from the venue. Particularly the number of events which can be held.

Adjacent to the speedway are other noise sources which may increase the perception of the Fairgrounds site noise as a whole, such as:

- Stadium
- I65 & I440
- Freight lines
- Fairground and Market

VISITOR ACCESS & TRANSPORT

Outside of the site the methods of access for the site have been substantially improved by the stadium development. There are now high quality sidewalks, roadways and connections to the wider transport network.

The site is very well positioned as a venue for attracting spectators due to its proximity to the city.

Parking pressure is likely to be high during big events as the construction of the stadium and mixed use development changes the availability of land for overflow parking.

UPGRADE ASSESSMENT



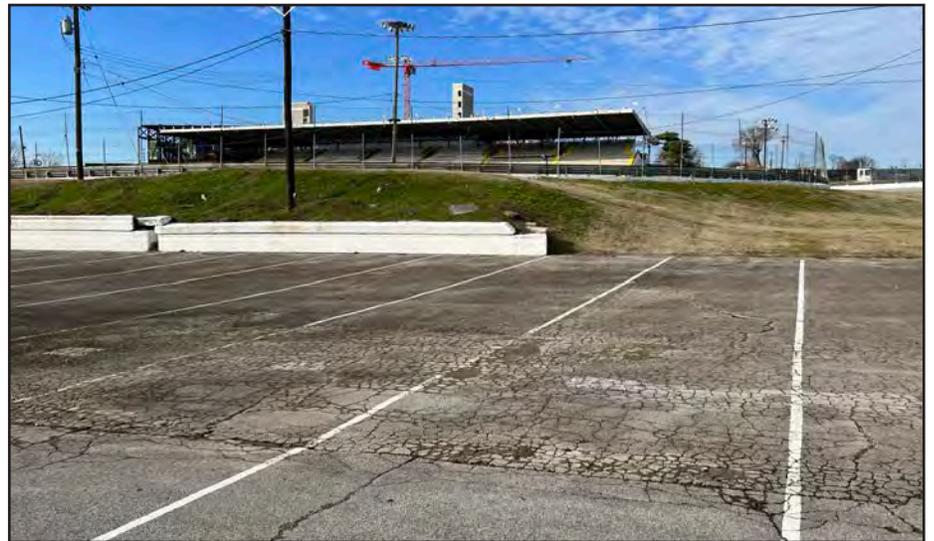
There is currently no noise mitigation around the perimeter of the speedway

2.8 Infield Facilities and Condition

PAVED SURFACE

The surface on the infield is functional but beginning to deteriorate. The surface ranges from grass and dirt to paved asphalt. Particularly in the areas used by trucks the asphalt is now cracking in an alligator pattern. There are few drainage features and generally water is allowed to run off the surface into the adjacent grass.

Based on the alligator cracking the pavement may be failing in the lower layers of pavement.



Asphalt cracking on infield

MEDICAL CENTRE

Driven did not observe the medical facilities for competitors.

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RESTROOMS

The infield restrooms, while functional, are quite dated. There were no visible signs of damage to the structure itself.

There are some potential issues of level access into the restrooms with a small step. Additionally, the ground around the restrooms has varying gradients and some deteriorated paving.



Small step up to infield restrooms

MINI BLEACHERS

The mini bleachers that face the smaller oval track are well used by teams on a race day. They appear functional in design and given their age are unlikely to be designed to modern standards.



Mini bleachers on the infield facing the smaller oval



2.9 Grandstand Condition

OVERALL CONDITION

The grandstand is an impressive structure with a large cantilever roof providing shelter to spectators and making up a majority of the spectator capacity of the venue.

The roof of the grandstand appears to be in reasonable condition, and we were told had had a recent structural assessment. There are numerous cosmetic problems, such as paint flaking off in several places and ripped flags which bring down the overall appearance of the venue. The roof appears to be in good condition, however there doesn't appear to be any safety system for use while working on top of it.

SETTING

Space around the grandstand and its circulation areas are limited by the proximity of adjacent buildings, and the steep slopes leading up to the access points. The grandstand now sits on an island between the new mixed use building and the speedway itself.

LIGHTING

The existing lighting for the grandstand is mounted to the underside of the cantilever roof in a position that makes maintenance a difficult and risky activity and potentially requires rope access for routine maintenance. It would be difficult to position a cherry picker underneath due to the grandstand seating.

SEATING

Access to the seating is covered in the following chapter. Concrete half steps have been formed to make the steep rise more manageable, but these half steps have broken in places. Some handrails are wobbly, and some have a wire mesh fixed to them which is exposed to the handrail which is a poor detail. Disabled access is limited with access being limited by the slopes and steps

We did not access the VIP decking area to the south of the grandstand, however it appeared to be in good condition.

OFFICES / DECKING

The race control and other offices at the top floor of the grandstand appeared functional, if a little dated.

UPGRADE ASSESSMENT



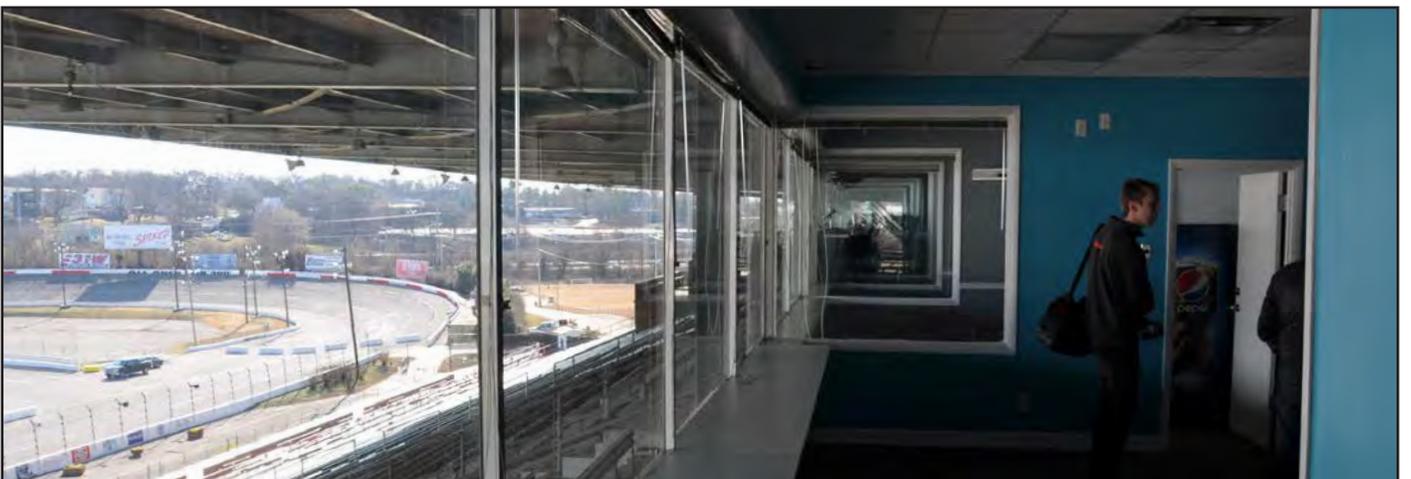
There is no visible mansafe or safety line system for working at height on the roof



The grandstands sit on a steeply sloping site



Exposed wire fence next to handrail



Offices and race control appear in reasonable condition



2.10 ADA Compliance and Disability Access

While some provision has been made for wheelchair and disability access around the speedway, it is still below what would be expected of a modern day facility.

ACCESS INTO THE VENUE

The newly constructed road network to the North of Fairgrounds Speedway has created an ADA compliant route to enter the venue, from Benton Avenue. Access from the road to the South West at the time of visit was partially under construction, and was not a suitable access for wheelchair users, however we assume this will be improved as part of the ongoing construction works in the area.

Looking at the plans for the apartments adjacent to the Speedway, it appears there will be a road that runs along the back of the grandstands, so presumably this will allow additional ADA compliant access into the venue and directly into the concessions area underneath the grandstands.

Officials and spectators accessing the venue from Craighead road will predominantly drive and use the parking provision in the main paddock and infield.

CIRCULATION AROUND THE PADDOCK AND INFIELD

The paved paddock area to the North of Craighead road has some steep gradient changes that may be unsuitable for wheelchair users. There is also an overflow area of paddock to the North which is unpaved, with steep access to get to the tunnel to the infield. Any pedestrians moving between these areas must navigate different surfaces and gradients which would not be ADA compliant if constructed today.

For the most part, pedestrian circulation around the infield appeared to be straightforward. There were a few areas, such as the ramp up to the mini bleachers that look to be very steep for wheelchair users.

Pedestrian circulation between the grandstand area and the infield is limited, and could be a lot better. The current options for pedestrians crossing the speedway are to leave the venue entirely and circulate around the South West road network, or to wait until track activity has ceased and circulate towards the South West gate up the steep banking of the speedway itself. Either of these routes is not ideal for people with mobility issues, meaning that any of the concessions or facilities available at the grandstands will be difficult for these users to access.

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Steep access to the left to the camping area



Steep slope leading to the mini bleachers on the infield



South West access is gently sloping with no direct footpath



The pedestrian crossing over the speedway is quite steep on the outer edge



2.10 ADA Compliance and Disability Access (Cont)

CIRCULATION AROUND GRANDSTANDS

Some provision has been made towards ADA compliance around the grandstands, with a ramp at the Northern entrance leading to a level area that allows viewing for wheelchair users next to an area that can accommodate temporary ADA compliant washroom facilities. Disconnected from this, the concessions area beneath the grandstand is fairly well equipped with a level smooth surface and ramped access to ADA compliant restrooms. There is also ramped access to a viewing deck higher up in the grandstands. This ramp is particularly steep, measured on site to be 7m length 1m rise, which would not be compliant if constructed today. There is also a sharp and steep left hand turn to access the viewing deck, which sits at the top of a large flight of stairs, which would be difficult and daunting for wheelchair users.

There is no ADA compliant connection between the two areas mentioned above, and no way for wheelchair users to access other parts of the site from the top viewing deck, which are accessible by able bodied spectators. Currently if someone in a wheelchair was located at the lower viewing deck and wanted to go to the concessions area, they would need to leave the venue entirely and continue up Benton Avenue to re-enter again underneath the grandstand.

The steps up the grandstands are unevenly spaced in many places and are positioned right on the movement join of the grandstand. Due to movement in the structure over the years, this has created an awkward level change along the centre of the treads which could be a trip hazard in the worst affected areas.

Access to the lower level bleachers from the upper walkway involves stepping over a 6 inch upstand before accessing the steps which is an awkward and unusual arrangement for spectators to navigate.

HOSPITALITY AND RACE CONTROL AREAS

While we were not able to use the elevator on our visit, the route for wheelchair users from the main concessions area to the race control and VIP rooms via the elevator seemed to be set up well and appeared to be ADA compliant.

We did not see this area on our visit, but there is a wooden viewing deck at the highest tier to the South of the grandstand which is accessed from the concessions area. This is from a similarly steep access ramp with a 1:7 slope as mentioned previously, which is very challenging in a wheelchair.

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ADA Compliant ramp and viewing area, but does not connect to the rest of the venue



Upstand at the top of the bleacher steps



Steep access ramps to access ADA viewing deck



Steps are uneven due to movement joint in grandstand



2.11 Concessions

CONCESSIONS

The concessions for Fairgrounds Speedway Nashville are located at the back of the grandstand, at an upper level that is accessible from the grandstand seating via ramps. The area is at the same grade with the proposed new road access in between the Speedway and the new apartment building, and there are access gates into the speedway along this Western edge.

In this area there are restrooms, a medical centre, ticket booth, and food kiosks. All of these facilities are looking dated, although they are functional. We did not access the kitchens for the food kiosks, but were told that the majority of the food prep takes place in the expo centre North of the Speedway with the food then being transported to and reheated in the kiosk kitchens. This limits the food offering to only food that can be reheated or transported and kept warm.

It was unclear from our visit, but it appears that it might be difficult for a food van to access and set up within the covered concessions area as it could block spectator circulation on a busy day.

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Concessions area looking North



Concessions area is quite basic, but functional



2.12 Wayfinding and Marketing

WAYFINDING

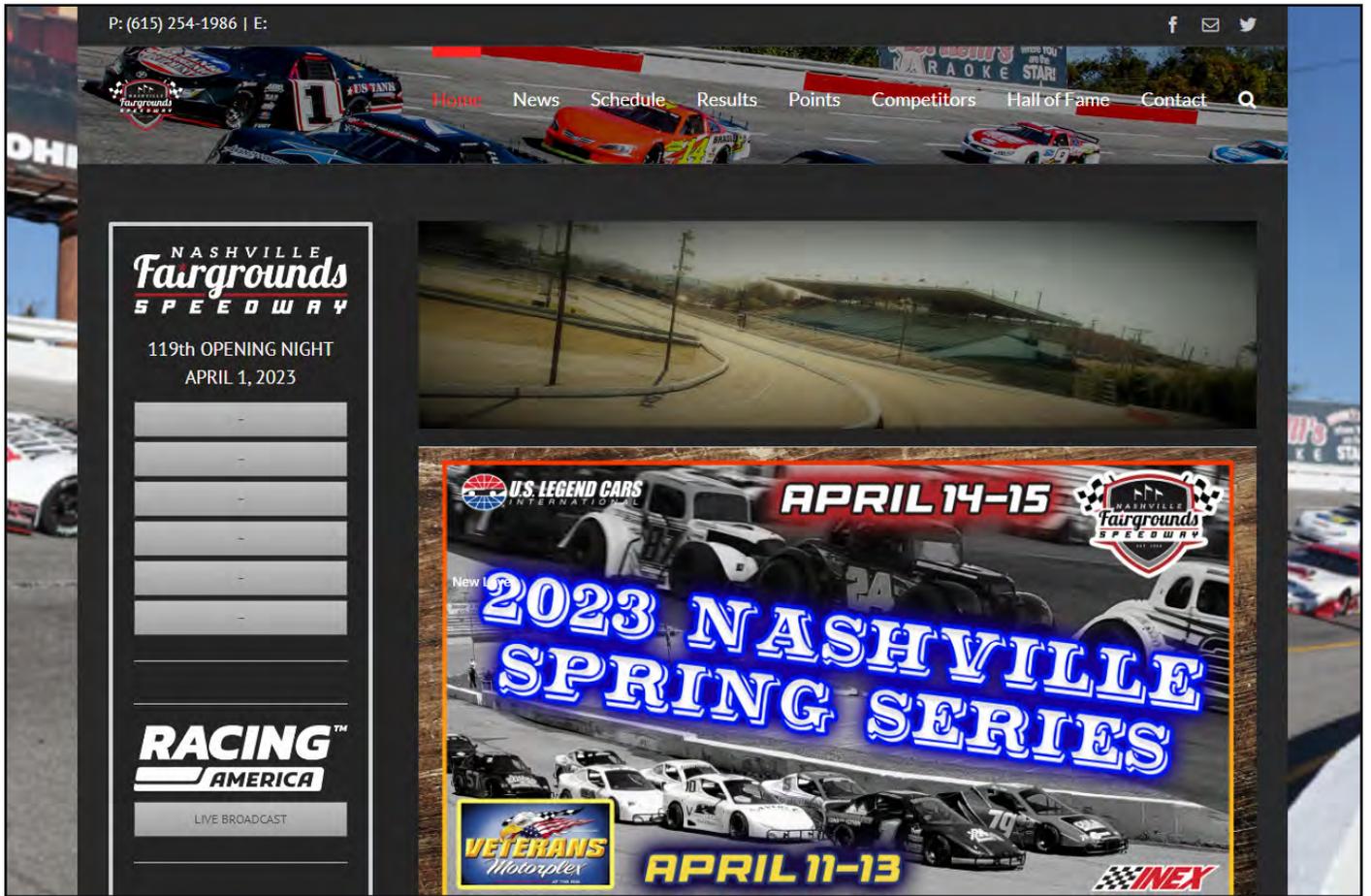
During our visit it was apparent that signage and wayfinding around the venue was poor. The route from the car parks to the venue comes to what looks from the outside to be a side gate, and looks fairly inconspicuous and underwhelming. There is also little signage in the grandstands to direct spectators towards food kiosks and the restrooms.

This lack of signage could be detrimental to the customer experience and may be leading to a reduction in sales revenue for the venue.

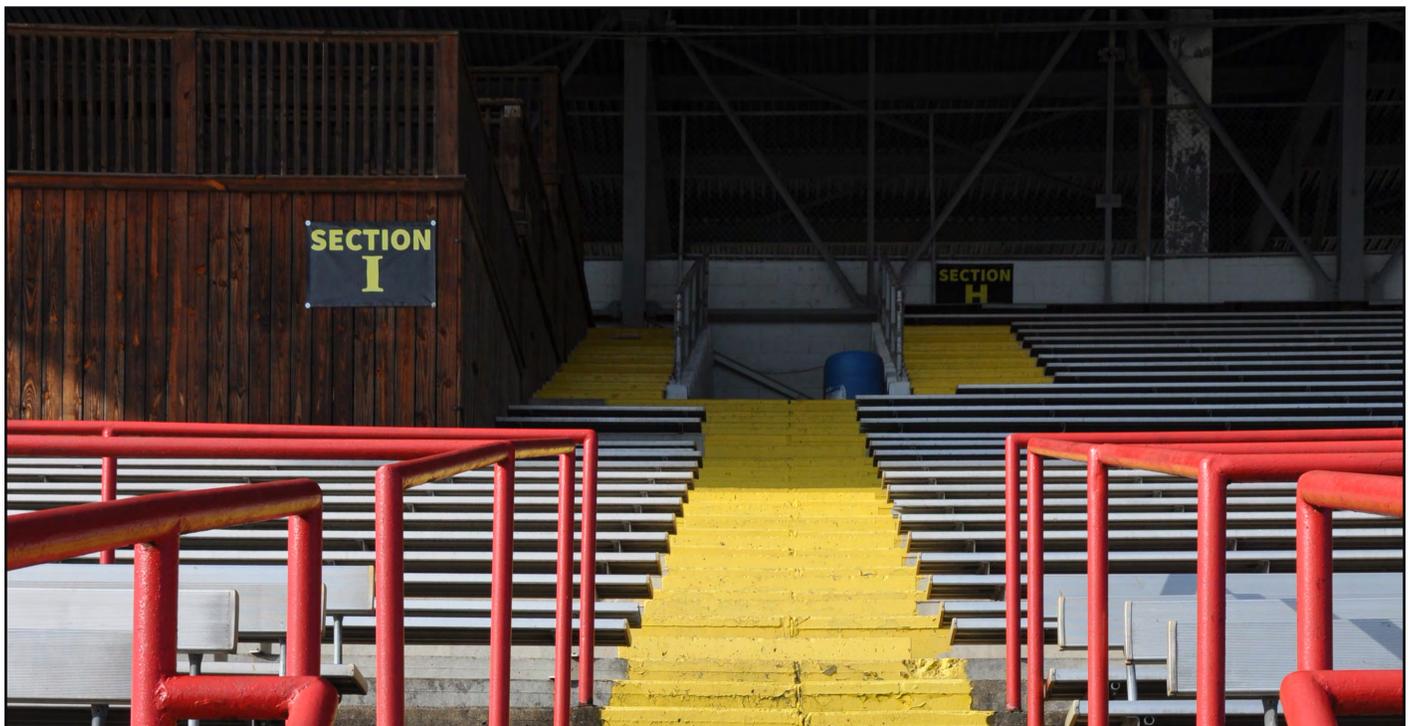
MARKETING

The website is looking dated, and it is difficult to find some of the information relevant to fans. There is no single map of the venue to tell fans and competitors what to expect in terms of facilities. The information for fans on the website is also under a page entitled "Competitors". These features are important in converting visitors to the website into customers of the Speedway.

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The website is looking quite dated, and can be difficult to navigate



There is some signage and wayfinding around the venue, however it could be more clear



RECOMMENDATIONS







3.1 Spectator, Officials and Competitors Access

RECOMMENDATION 3.1.1 – RETAIN OR INCREASE PARKING PROVISION

Sufficient parking for larger events at Fairgrounds Speedway Nashville is essential to its continued operation. The amount of parking at the speedway looks to have been significantly reduced over recent years with the introduction of the GEODIS stadium and apartment blocks, and it is important for the success of the Speedway to maintain current levels or try to increase parking provision where possible.

Timescale	Priority	Impact of Works	Benefit
Long Term	High	Low	High

RECOMMENDATION 3.1.2 – RELEVEL ACCESS TO INFIELD

Trucks are scraping along the Speedway asphalt as they navigate the steep access to the infield from the South West gate. We recommend to counter this, the surface either side of the speedway is levelled out to ease the transition of the trucks.

This could be achieved without affecting the speedway surface. If the transition across the gate is smoothed to ease the vertical profile, and similar work carried out to the infield side of the speedway this could allow trucks to cross over without bottoming out and scraping up the speedway surface.

Timescale	Priority	Impact of Works	Benefit
Long Term	Medium	High	Medium

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Current access for trucks to infield



3.2 Track Surface Upgrades

RECOMMENDATION 3.2.1 – CRACK REPAIRS AT JOINTS IN ASPHALT

The large cracking in the track should be filled with an appropriate asphalt crack repair product and methodology to stop further water ingress into the circuit and spalling of aggregate in the near term, until a resurfacing project can be carried out. This would only be a short term solution and attention should be paid to the product selected for its strength and grip properties.

Timescale	Priority	Impact of Works	Benefit
Short Term	High	High	Medium

RECOMMENDATION 3.2.2 - CARRY OUT A HIGH ACCURACY SURVEY OF THE ASPHALT SURFACE

Modern surveying technology allows the capture of asphalt surface data utilising lidar equipment to a high accuracy which can then be utilised to examine the longitudinal and transverse characteristics of the racing surface.

To achieve the accuracy required for circuits aerial based lidar is not appropriate. Instead vehicle mounted systems such as the Leica Pegasus, or static scanners should be used. In any case the results should be tied to a ground reference points surveyed by a surveyor with a total station and digital level.

Cost to be within design/survey consultancy scope for resurfacing

Timescale	Priority	Impact of Works	Benefit
Medium Term	High	Low	Low

RECOMMENDATION 3.2.3 – RESURFACE THE SPEEDWAY

It is recommended that a multi layer resurfacing project is undertaken to upgrade the asphalt surface to a high standard and safeguard the use of the speedway for racing as the current surface would not last long into the next 30 year period. Given the distress to the top surface and the profile of the track it should be planned to resurface more than one layer of the track with potential foundation repairs. Furthermore, the tolerances required within a race track are exceedingly difficult to meet, particularly where the circuit has a long history and old foundations. This

During the resurfacing a crossfall correction exercise should be undertaken to create a consistent crossfall around the circuit such that drivers can be confident in the lateral grip available on turns. This should be kept at 18 degrees to match the existing stated camber.

Within the pit road area, particularly the working area for mechanics, the decision to resurface using concrete may be a good one. This will provide a longer lasting surface if carried out correctly.

It is recommended that an expert in race track paving is engaged to assist in the development of specification and contractual clauses for any resurfacing such that the industry best practice is implemented. The highest quality asphalt is increasingly expected by the top-flight series, particularly after a high profile renovation.

Particular features expected of any resurfacing:

- Utilisation of automatic machine control technology to control milling depths
- Bespoke asphalt mix design to suit racing with modified binders & stringent controls on constituent materials.
- Bespoke laying plans to suit the geometry of the oval, including specially adapted laying techniques.
- Avoidance of transverse joints
- Extremely high ride quality
- Good quality of asphalt mixing plant.

The USA benefits from companies highly experienced in the complexities of paving oval race tracks who can be introduced to the project should it progress further.

Its important note: Old asphalt surfaces may contain tar / polyaromatic hydrocarbons which must be treated in accordance with local codes. It is recommended that suitable testing is carried out prior to disturbing asphalt layers such as through the testing of cores. In general a full scheme of testing and analysis is required for all aspects of the pavement for resurfacing.

Timescale	Priority	Impact of Works	Benefit
Long Term	High	High	High



3.2 Track Surface Upgrades (Continued)

RECOMMENDATION 3.2.4 – SUBSURFACE DRAINAGE PROVISION TO AID ASPHALT DRYING

The presence of water coming through the lower parts of the banking indicates water beneath the track / migrating through the asphalt. It is recommended that during resurfacing works the below track drainage is upgraded. This will require further investigation to design but a granular drainage mat or filter drains may be appropriate to alleviate the problem.

The improved drainage should improve drying times after rainfall and reduce the need to cut drainage slots in any new asphalt.

Timescale	Priority	Impact of Works	Benefit
Long Term	High	High	High

OPTIONAL RECOMMENDATION 3.2.5 – GRIP INVESTIGATION

If required, the client may decide to undertake an investigation into the existing grip levels available at the circuit. This could then be interrogated, along with surface profile, to establish the quality of the surface prior to works. Given the existing condition of the asphalt, grip may appear very variable and the data is therefore not essential.

The benefit of understanding the existing condition is the ability to benchmark the renovated surface. It may prove useful in setting performance based clauses in any future construction contract and highlight areas where the most deterioration is to be expected in future.

Timescale	Priority	Impact of Works	Benefit
Medium Term	Medium	Low	Medium

UPGRADE ASSESSMENT



Existing drainage problems on track



Visible cracking in asphalt



3.3 Track Safety Condition

RECOMMENDATION 3.3.1 – PROVIDE NEW CATCH FENCING AT CRITICAL LOCATIONS

The road location behind turn 3 & 4 represents a risk to road users during use of the speedway. Driven recommend that a new circuit catch fence is provided around this section and similarly at turn one.

There is currently no catch fencing at the location where the tunnel goes under the track, this should be provided too.

During this upgrade works it would be beneficial to upgrade the fencing in front of the grandstand to modern standards with a higher fence and better containment to provide the current industry standard protection for spectators and participants.

Finally the small infield track should be surrounded by catch fence in the paddock areas where spectators / participants are likely to be located. This is because the current fence arrangement is unlikely to hold up to significant impact.

Further lifespan recommendation. Given the tight nature of the site of the speedway it should be considered to provide a continuous catch fence around the circuit, particularly if higher powered / faster / heavier cars are to be attracted to the venue.

Timescale	Priority	Impact of Works	Benefit
Long Term	High	Medium	Medium

RECOMMENDATION 3.3.2 – PROVIDE ATTENUATORS TO THE ENDS OF CONCRETE

The use of heavy vehicle tyres as attenuators on the end of exposed concrete walls is not desirable. An upgraded attenuator is recommended to be installed at all exposed concrete wall ends to assist in a scenario where it is hit by a vehicle.

Timescale	Priority	Impact of Works	Benefit
Medium Term	High	Medium	High

RECOMMENDATION 3.3.3 – TEMPORARY CONCRETE BLOCKS TO ACHIEVE CONTINUOUS WALLS

Where there are gaps in the walls close to the racing area it may be advantageous to provide moveable concrete blocks or gates such that there are not exposed wall ends.

Timescale	Priority	Impact of Works	Benefit
Short Term	Medium	Low	Medium

UPGRADE ASSESSMENT

RECOMMENDATION 3.3.4 – PROVISION OF SAFER BARRIER

Generally, all circuits running NASCAR races are utilising SAFER barrier to provide cushioning to participants in the event of an incident on track. Some of these circuits have in the past upgraded the corners, before later adding the barrier continuously around the entire lap. One such example of this is the Martinsville Speedway which is a similar short oval.

Given the objectives to increase motorsport safety it is recommended that an upgrade to SAFER barrier is made by the circuit for its long term future. Cascading best practice down from the top level series is common across motorsport to improve safety for all competitors. It may be that the upgrade is phased to the corners first and the entire lap to follow later depending on cashflow.

It is worth noting that the upgrade to SAFER barrier may require modifications / rebuilding of the existing concrete wall given its height.

Timescale	Priority	Impact of Works	Benefit
Long Term	High	High	High



Heavy machinery tyres currently used as attenuator



3.4 Track Operation Condition

All recommendations for track operation are covered in other recommendations.

3.5 Track and Site Drainage

RECOMMENDATION 3.5.1 – DRAINAGE SURVEY

It is recommended that a drainage inspection is undertaken to determine the condition of below ground pipes and check for obstructions that may prohibit the efficient drainage of the infield areas.

Timescale	Priority	Impact of Works	Benefit
Short Term	High	Low	Medium

RECOMMENDATION 3.5.2 – OVERALL UPGRADE TO TRACK DRAINAGE

During any larger scale renovations, such as resurfacing the track it is recommended to provide upgraded drainage infrastructure to serve the whole site. This is likely to include:

- Drainage gratings to a race track spec within the pit road area
- Filter Drains within the grass at the edge of the track
- Below ground pipework with sufficient capacity
- Drainage gratings in the paddock
- Attenuation crates beneath the paddock to slow outfall rates
- Drainage blanket beneath the track in areas of high groundwater

Timescale	Priority	Impact of Works	Benefit
Long Term	High	High	High

UPGRADE ASSESSMENT

RECOMMENDATION 3.5.3 – FILTER DRAINS IN PADDOCK

It is clear that drainage is very limited in the paddock with most areas drainage to the nearby grass an a small ditch. This can be marginally improved with the construction of filter drains at the edges of the asphalt to capture water and slowly return it to the pipework and outfall. Some releveling of asphalt could be considered in this project to prevent ponding, although it is better to consider a bigger repaving exercise in the infield.

Timescale	Priority	Impact of Works	Benefit
Short Term	High	Low	Medium

RECOMMENDATION 3.5.4 – FLOOD GATE AND NON RETURN VALVE AT THE BRIDGE

Given the low level of the infield paddock and historic flooding suitable mitigation features should be provided to limit the chance of flooding affecting the infield in the future and damaging any retained or renovated features. As the tunnel is lower than top of bank for the river a flood gate should be considered. Likewise, a non-return valve on the outfall would be required to stop water backing up.

Mitigations such as this will require careful hydraulic design.

Timescale	Priority	Impact of Works	Benefit
Long Term	Medium	Medium	Medium



3.6 Site Utilities and Electronics

RECOMMENDATION 3.6.1 – REPLACE THE SCOREBOARD WITH A MORE MODERN EQUIVALENT

Replacing the scoreboard presents a great opportunity to modernise with a large screen. This would update the look and feel of the spectator experience, create a much improved representation of the track action, and generate revenue through modern advertising opportunities.

Timescale	Priority	Impact of Works	Benefit
Long Term	Medium	Medium	High

RECOMMENDATION 3.6.2 – IMPROVE INCOMING WATER SUPPLY TO INFIELD

Removing and replacing the incoming water supply pipework up to the main could be a significant operation, but would allow for infield amenities such as showers, larger toilet blocks, and car wash facilities.

Timescale	Priority	Impact of Works	Benefit
Long Term	Medium	High	High

UPGRADE ASSESSMENT



The scoreboard should be updated to a screen capable of displaying more information and advertising



3.7 Environmental / Social Condition

RECOMMENDATION 3.7.1 – INSTALL A NOISE BARRIER AROUND THE PERIMETER

Previously consultants have presented proposals to provide a 20ft noise barrier around the circuit. The purpose of such a barrier is to provide improvements to the local community such that the noise impact from the speedway is kept to a minimum. Motorsports venues are increasingly requiring advanced noise mitigation plans when situated near to built up areas. Whilst the noise barrier not affecting racers or spectators at the venue it is recommended as a measure which will help the speedway within the community, particularly as further development happens in the area.

Ideally, investment in noise mitigation (barriers or otherwise) against the current baseline would provide additional opportunities for the speedway to run and earn revenue.

Timescale	Priority	Impact of Works	Benefit
Long Term	Medium	Medium	High

RECOMMENDATION 3.7.2 – ALLOWANCE FOR ELECTRIC VEHICLE EVENTS

Whilst not a current feature on the calendar, it is likely that future events will develop using electric vehicles over the next 30 years. Given the lower noise emissions from these vehicles it would be sensible to exclude electric vehicle running from any cap on event numbers if possible.

Timescale	Priority	Impact of Works	Benefit
Long Term	Low	Medium	High

RECOMMENDATION 3.7.3 – OIL / GRIT SEPARATORS & OTHER SUSTAINABLE DRAINAGE

If areas are being upgraded they should be designed up to modern drainage standards to limit the impact on the environment of the venue. This could include features such as oil and grit separators to improve the quality of water discharged to the local river, or flow attenuation, for example.

Timescale	Priority	Impact of Works	Benefit
Long Term	Low	High	Medium

RECOMMENDATION 3.7.4 – NOISE MONITORING

There are providers of technology suited for the prediction of motorsport noise, particularly noise caused by moving vehicles. Software can now predict the noise experienced at a receptor and the impact of different mitigations which can then be monitored when the venue is in use. It is recommended that a full analysis of noise from moving sources is carried out. It may also be of benefit to the venue to install noise monitoring equipment outside of the venue after the opening of the renovations such that continued monitoring can be carried out and to engage with the community on actual noise levels.

Timescale	Priority	Impact of Works	Benefit
Short Term	Medium	Low	Medium



3.8 Infield Facilities and Condition

RECOMMENDATION 3.8.1 – REPAVE AND / OR RECONFIGURE THE INFIELD AREAS

During the visit it was identified that the infield paddock area is one of the only areas for staging for events and that it was likely that further back paddock area could be lost to a flood compensation scheme. If this occurs, it is recommended that some of the area is reprovided inside of the speedway through expanding the paddock area. This may mean changing the ground levels in the infield area such that more usable area is created. It is likely that in the long term paving most of the infield and relevelling will be required to reprovide the areas assigned to initiatives like flood compensation.

Given the failing surface within the paddock reconstruction of these areas is likely to be needed soon unless the intention is to let the surface deteriorate into an unbound type surface throughout. There may be an opportunity to utilise less intensive repair methods in some areas

Timescale	Priority	Impact of Works	Benefit
Long Term	High	High	High

RECOMMENDATION 3.8.2 – UPDATE THE INFIELD RESTROOM FACILITIES

The restrooms on the infield are functional but in need of updating. The structures containing the facilities appear to be in good condition, so we recommend a refurbishment of the interior decoration and sanitary ware is all that is required. A small amount of work to ensure level access into the facilities, and creating at least one ADA compliant stall would also be recommended, so that the infield area can accommodate disabled users while the track is in use.

Timescale	Priority	Impact of Works	Benefit
Medium Term	Medium	Medium	High

CONSIDERATION 3.8.3 – BUILD A NEW TUNNEL UNDER TURN 3

The current access tunnel to the paddock is not suitable for the largest vehicles that need to access the infield paddock therefore the construction of a new access tunnel should be considered in any major upgrade programme. A new junction from Walsh road connecting under the track would provide a great link between the infield and the rest of the fairgrounds, particularly:

- Creating a closer link between the expo area and the infield, allowing it to be used as an expansion or overflow area for large events
- Allowing the infield to be used as a large, easy to access parking area directly off one of the main access junctions to serve the Expo and Stadium when the speedway is not in use.
- Preventing large trucks from having to cross the track at T1 to access the infield.
- Providing close connection to the area northeast of the speedway which could form part of the strategy for paddock / parking in the future. (see image below).

Timescale	Priority	Impact of Works	Benefit
Long Term	Low	High	High



3.9 Grandstand Condition

RECOMMENDATION 3.9.1 – INSTALL EASIER TO MAINTAIN GRANDSTAND LIGHTING

Remove the existing lighting suspended underneath the grandstand roof, and replace with a high bay lighting winch system or truss based system, that would allow the lighting to be lowered to ground level for easier maintenance.

Timescale	Priority	Impact of Works	Benefit
Long Term	Medium	Medium	High

RECOMMENDATION 3.9.2 – GENERAL MAINTENANCE TO THE GRANDSTANDS

The appearance of the venue would be uplifted with a small amount of maintenance to the grandstand area. Our suggested list would include:

- Repainting the grandstand and underside of the roof
- Repairing/replacing any cracked concrete steps
- Repairing any loose handrails
- Replacing wire mesh balustrades with something more suitable that doesn't have sharp edges close to the handrail

Timescale	Priority	Impact of Works	Benefit
Short Term	High	Medium	High

RECOMMENDATION 3.9.3 – INSTALL A SAFETY LINE SYSTEM TO THE GRANDSTAND ROOF

For safe working on the grandstand roof, especially towards the edges (where there is lighting that requires maintenance, for example) we recommend a Mansafe or safety line system be installed. This allows users to clip on while working, offering protection from falling from height.

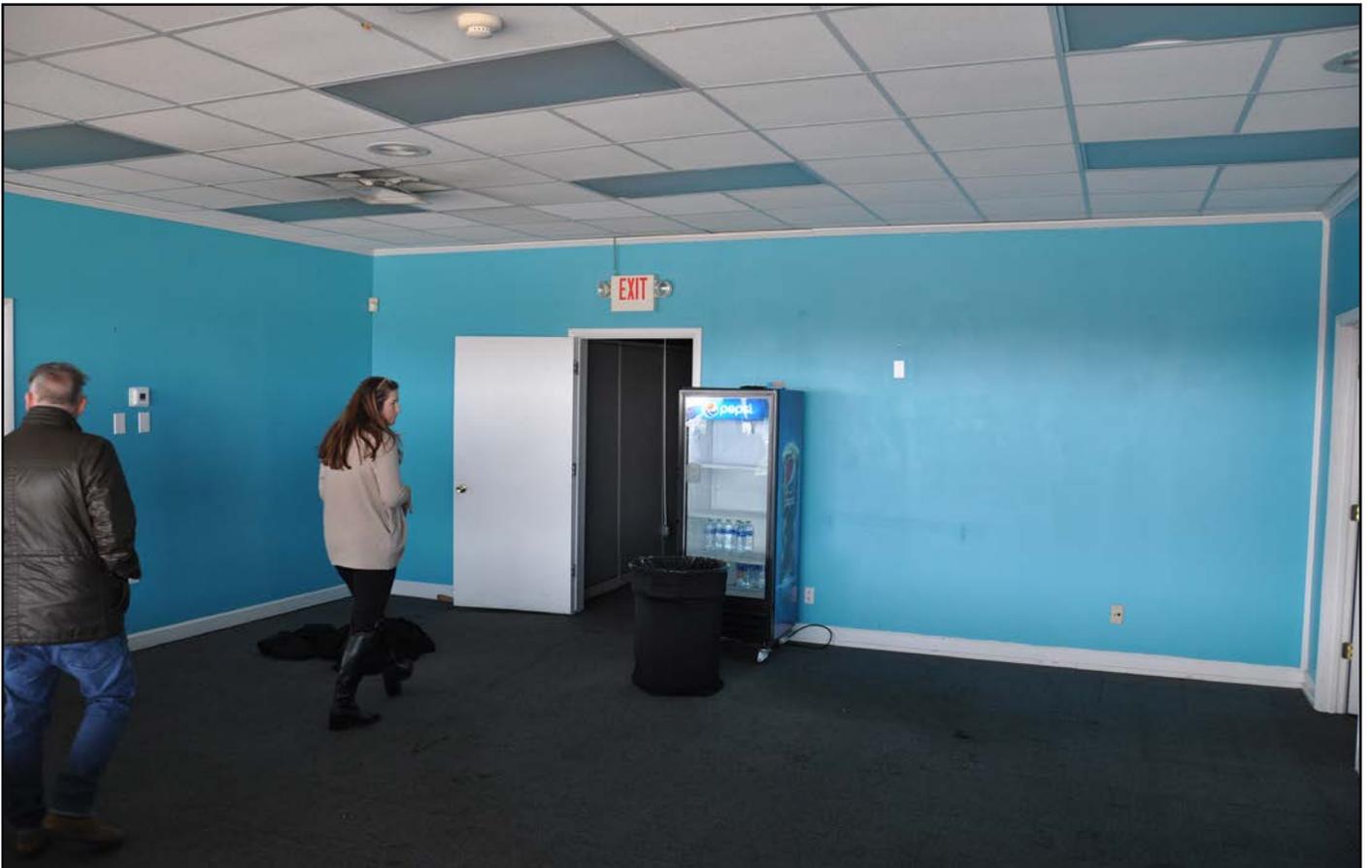
Timescale	Priority	Impact of Works	Benefit
Medium Term	Medium	Low	Medium

UPGRADE ASSESSMENT

RECOMMENDATION 3.9.4 – RENNOVATIONS IN OFFICES AT TOP OF GRANDSTAND

The rooms at the top of the grandstand could use a refurbishment to help lift the appearance and experience of the venue and VIP experience. This would include repainting, recarpeting, replacing ceiling tiles, and updating any fixtures and fittings.

Timescale	Priority	Impact of Works	Benefit
Short Term	Medium	Medium	Medium



Upper offices and race control areas



3.10 ADA Compliance and Disability Access

RECOMMENDATION 3.10.1 – IMPROVE ADA COMPLIANT CONNECTIVITY

There are many parts of the venue that have considered ADA compliance, however these areas are quite disconnected from each other. The experience of a disabled person would be vastly improved if there were simple ways to navigate around the spectator areas, especially between the key areas such as track viewing, concessions, restrooms, and main entrances and exits.

There appears to be space available at either end of the grandstand to achieve a ramped access to connect the concessions area to the lower viewing decks and main entrances. This would also allow disabled spectators to use the ADA restrooms to the West, and remove the need to bring in temporary facilities to the lower spectator areas. This freed up space could be used for other concessions, such as for a food truck.

Timescale	Priority	Impact of Works	Benefit
Long Term	High	Medium	High

RECOMMENDATION 3.10.2 – EASE THE GRADIENT OF THE RAMPS

The current ramped access between concessions and the grandstands is estimated to be a 1:7 gradient. Typically ADA compliant ramps do not exceed 1:12, so it is recommended that this maximum gradient is used. A landing halfway on the ramp may be required, but the concessions area could accommodate the ramp extending into it to allow for this.

Timescale	Priority	Impact of Works	Benefit
Long Term	High	Medium	High

RECOMMENDATION 3.10.3 – LEVEL STEPPED ACCESS AROUND THE GRANDSTANDS

The height difference between steps on the grandstands is not always consistent. There is also a movement joint in the grandstands that splits the steps in half and creates uneven landings in places.

To address this, we recommend fixing a new surface to the grandstand steps that creates level treads and a more even distribution of rises.

We also recommend installing a handrail on at least one side of the steps for spectators that may require additional assistance.

Timescale	Priority	Impact of Works	Benefit
Medium Term	Medium	Medium	Medium

UPGRADE ASSESSMENT

RECOMMENDATION 3.10.4 – CREATE AN ADDITIONAL ADA TRACK VIEWING PLATFORM

There is currently an ADA spectator area to the North, but it is located behind the bleachers. The view from here must be substandard for someone in a wheelchair, especially if there were spectators in the back rows of the bleachers.

We recommend building an ADA compliant spectator platform out in this location that gives a better and unobstructed outlook on the Speedway. This would replace the back 3-5 rows of bleachers in the lower seating tier, over a width of 20-40ft.

Timescale	Priority	Impact of Works	Benefit
Long Term	Medium	High	High

RECOMMENDATION 3.10.5 – CREATE AN ADA COMPLIANT ROUTE TO THE INFIELD

The current route from the grandstands to the infield for pedestrians involves crossing the speedway close to the banked corner. This means the walking route slopes steeply down towards the infield, and appeared from our inspections to be steeper than a 1:20 gradient.

We would recommend another way to cross the speedway is explored, perhaps halfway along the main straight, which would be a more level access. This could be in addition to the current crossing route, to offer maximum flexibility for the operation of the venue.

If this is not possible, the venue could put in place a shuttle service to help spectators who are less able to walk to move between the infield and grandstands.

Timescale	Priority	Impact of Works	Benefit
Long Term	Medium	Medium	Medium



3.11 Concessions

RECOMMENDATION 3.11.1 – IMPROVE THE DINING OPTIONS

It is recognised that it is likely to be difficult to upgrade the kitchen facilities to offer an improved menu at the Speedway, without significantly changing the building arrangement and adding new infrastructure.

It could however be beneficial for the venue to offer a dedicated space for local food trucks to park up during an event, to extend the dining options. This could be incorporated into the new road currently being constructed to the West of the venue (if the pay lines can be negotiated), or on new purpose built concrete pads accessible from the surrounding road network. There is space for this to the North West and South West.

Visitors are increasingly looking for more impressive catering options and the venue should look to provide a strong catering offering at all events.

Timescale	Priority	Impact of Works	Benefit
Short Term	Medium	Medium	High

RECOMMENDATION 3.11.2 – REFURBISH ALL RESTROOMS

While the restrooms are functional, they will be in need of refurbishment if the venue is to continue operation for a further 30 years. We suggest this is carried out as part of the grandstand refurbishment, to improve the overall appearance of the venue and experience of the spectators.

Timescale	Priority	Impact of Works	Benefit
Medium Term	Medium	Medium	High

RECOMMENDATION 3.11.3 – REPLAN THE CUSTOMER EXPERIENCE UNDER THE GRANDSTAND

The entire concessions area could be reconsidered to better facilitate customer flow, wayfinding to restrooms and food, and to provide better catering facilities on site. This would also include repainting and decorating to be more on brand with the venue and the construction of new facilities.

This work could tie in with the enhanced ADA compliant connectivity mentioned previously, as part of a renovation masterplan for the venue.

Timescale	Priority	Impact of Works	Benefit
Long Term	Medium	High	High

UPGRADE ASSESSMENT



The current concessions area is uninspiring and lacks a range of dining options



Existing restrooms are functional but in need of refurbishment



3.12 Wayfinding and Marketing

RECOMMENDATION 3.12.1 – UPDATE AND IMPROVE THE WAYFINDING AROUND THE VENUE

An upgrade to the fan experience at Nashville Fairgrounds Speedway would be to create new venue maps and a wayfinding strategy and improvements to concessions. This would improve the overall experience for fans by making it easier for them to navigate the track and find their way to their seats, restrooms, concessions, and other amenities.

A wayfinding strategy is an effective way to guide visitors to the different parts of the venue and to make the overall experience more enjoyable for all guests. Mapping out the journey of visitors through the speedway will enable Metro to determine the most effective locations for concessions, ticketing etc. It will also assist in ensuring ADA compliant access to those parts of the venue most important to the visitors.

Timescale	Priority	Impact of Works	Benefit
Short Term	Medium	Low	High

RECOMMENDATION 3.12.2 – IMPROVE THE VENUE MAP AND DIGITAL WAYFINDING

A new venue map should be designed with the fan experience in mind, highlighting key areas and amenities, and providing clear and easy-to-read information. It should be available in multiple formats, such as print, digital, and mobile, to make it accessible to all fans. The map should also include information on parking, transportation, and other logistical details to help fans plan their visit to the track.

By creating new venue maps and implementing a wayfinding strategy, fans at will have an improved experience and will be able to navigate the venue with ease. This will help to enhance the overall enjoyment of venue and crucially for the speedway may create improved commercial performance.

Timescale	Priority	Impact of Works	Benefit
Short Term	Medium	Low	High

UPGRADE ASSESSMENT



RECOMMENDATIONS SUMMARY





A NEW CHOICE IN
SO COVERAGE & VALUE

BASS TIRE

RACING
AMERICA

CROSBY

THE BATTER'S BOX

102.5
DAME

CENTRAL TIRE

Ms. Betty's
FRONTS

OCT 28 - OCT 30

★ US TANK ★

RACKLEY

T Mobile

HUNT
BROTHERS
PIZZA

CANNED
COCKTAILS
I WANT
TO FEEL
THIS

RACKLEY
ROOFING

US TANK
CRYOGENIC
EQUIPMENT



COST ESTIMATE BREAKDOWN*

	Recommendation	Timescale	Priority	Impact of works	Benefit	Estimated Cost (Provider A)	Estimated Min Cost (Provider B)	Estimated Max Cost (Provider B)
3.1.1	Retain or increase parking provision	Long	High	Low	High	\$630,000	-	-
3.1.2	Relevel access to infield	Long	Medium	High	Medium	\$60,000	\$75,000	\$100,000
3.2.1	Crack repairs at joints in asphalt	Short	High	High	Medium	\$570,000	\$80,000	\$90,000
3.2.2	Carry out a high accuracy survey of the asphalt surface	Medium	High	Low	Low	\$25,000	\$22,500	\$25,000
3.2.3	Resurface the speedway	Long	High	High	High	\$2,290,000	\$7,000,000	\$9,000,000
3.2.4	Subsurface drainage provision to aid asphalt drying	Long	High	High	High	\$190,000	\$804,000	\$900,000
3.2.5	Grip investigation	Medium	Medium	Low	Medium	\$10,000	\$42,000	\$45,000
3.3.1	Provide new catch fencing at critical locations	Long	High	Medium	Medium	\$810,000	\$832,000	\$850,000
3.3.2	Provide attenuators to the ends of concrete walls	Medium	High	Medium	High	\$30,000	\$20,000	\$30,000
3.3.3	Temporary concrete blocks to achieve continuous walls	Short	Medium	Low	Medium	\$10,000	\$55,000	\$75,000
3.3.4	Provision of safer barrier	Long	High	High	High	\$760,000	\$2,375,000	\$2,650,000
3.5.1	Drainage survey	Short	High	Low	Medium	\$15,000	\$115,000	\$125,000
3.5.2	Overall upgrade to track drainage	Long	High	High	High	\$1,700,000	\$1,380,000	\$1,750,000
3.5.3	Filter drains in paddock	Short	High	Low	Medium	\$120,000	Incl in 3.5.2	Incl in 3.5.2
3.5.4	Flood gate and non return valve at the bridge	Long	Medium	Medium	Medium	\$70,000	\$1,000,000	\$1,850,000
3.6.1	Replace the scoreboard with a more modern equivalent	Long	Medium	Medium	High	\$310,000	\$2,500,000	\$5,000,000
3.6.2	Improve incoming water supply to infield	Long	Medium	High	High	\$140,000	\$250,000	\$500,000
3.7.1	Install a noise barrier around the perimeter	Long	Medium	Medium	High	\$3,830,000	\$5,116,800	\$6,500,000
3.7.2	Allowance for electric vehicle events	Long	Low	Medium	High	-	\$1,300,000	\$1,500,000
3.7.3	Oil / grit separators & other sustainable drainage	Long	Low	High	Medium	Incl in 3.5.2	\$500,000	\$750,000
3.7.4	Noise monitoring	Short	Medium	Low	Medium	\$25,000	\$3,000	\$10,000
3.8.1	Repave and / or reconfigure the infield areas	Long	High	High	High	\$6,450,000	\$1,800,000	\$2,000,000
3.8.2	Update the infield restroom facilities	Medium	Medium	Medium	High	\$440,000	\$50,000	\$80,000
3.8.3	Build a new tunnel under turn 3	Long	Low	High	High	\$4,350,000	\$850,000	\$1,137,500
3.9.1	Install easier to maintain grandstand lighting	Long	Medium	Medium	High	\$1,430,000	\$250,000	\$400,000

UPGRADE ASSESSMENT

	Recommendation	Timescale	Priority	Impact of works	Benefit	Estimated Cost (Provider A)	Estimated Min Cost (Provider B)	Estimated Max Cost (Provider B)
3.9.2	General maintenance to the grandstands	Short	High	Medium	High	\$830,000	\$350,000	\$650,000
3.9.3	Install a safety line system to the grandstand roof	Medium	Medium	Low	Medium	\$40,000	\$75,000	\$100,000
3.9.4	Renovations in offices at top of grandstand	Short	Medium	Medium	Medium	\$480,000	\$750,000	\$1,000,000
3.10.1	Improve ADA compliant connectivity	Long	High	Medium	High	\$280,000	\$850,000	\$1,200,000
3.10.2	Ease the gradient of the ramps	Long	High	Medium	High	\$110,000	\$350,000	\$450,000
3.10.3	Level stepped access around the grandstands	Medium	Medium	Medium	Medium	\$390,000	\$250,000	\$325,000
3.10.4	Create an additional ADA track viewing platform	Long	Medium	High	High	\$100,000	\$150,000	\$350,000
3.10.5	Create an ADA compliant route to the infield	Long	Medium	Medium	Medium	\$30,000	\$850,000	\$1,200,000
3.11.1	Improve the dining options	Short	Medium	Medium	High	-	\$750,000	\$950,000
3.11.2	Refurbish all restrooms	Medium	Medium	Medium	High	\$880,000	\$500,000	\$750,000
3.11.3	Replan the customer experience under the grandstand	Long	Medium	High	High	\$1,120,000	\$2,000,000	\$3,500,000
3.12.1	Update and improve the wayfinding around the venue	Short	Medium	Low	High	\$70,000	\$50,000	\$100,000
3.12.2	Improve the venue map and digital wayfinding	Short	Medium	Low	High	\$80,000	\$35,000	\$75,000
	TOTAL					\$28,675,000	\$33,380,300	\$46,017,500

COST ESTIMATE SUMMARY*

Cost range quote	Estimate total (low)	Estimate total (medium)	Estimate total (high)
Provider A	\$14,340,000	\$28,675,000	\$43,010,000
Provider B	\$33,380,300		\$46,017,500

* It is recommended that these costs are used for high level budgeting exercises only. All costs shown are high level and based on the recommendations within this report. As recommendations are developed in greater detail beyond this report, the costs will become less variable. All costs shown in USD. Both providers have supplied more detailed breakdowns of the cost estimates which have exclusions and assumptions which are not shown in this report.

